COMMONWEALTH OF MASSACHUSETTS

DEPARTMENT OF TELECOMMUNICATIONS AND ENERGY

Investigation by the Department of Telecommunications and Energy on its own Motion into the Appropriate Pricing, based upon Total Element Long-Run Incremental Costs, for Unbundled Network Elements and Combinations of Unbundled Network Elements, and the Appropriate Avoided Cost Discount for Verizon New England, Inc. d/b/a Verizon Massachusetts' Resale Services in the Commonwealth of Massachusetts	D.T.E. 01-20

VERIZON MASSACHUSETTS

FIRST SET OF INFORMATION REQUESTS TO AT&T

Verizon New England Telephone Inc. d/b/a Verizon Massachusetts ("Verizon MA") requests that AT&T Communications of New England, Inc. ("AT&T") respond to the following information requests addressed to it or its witnesses. In the event responses to all or part of these requests will not be forthcoming in the time period established for this proceeding by the Massachusetts Department of Telecommunications and Energy, kindly notify Verizon MA as soon as possible.

These requests shall be deemed continuing so as to require further and supplemental responses if AT&T, or its witnesses receive or generate additional information within the scope of these requests between the time of the original responses and the end of hearings in this proceeding.

All responses should conform to the specifications as given in the Definitions and Instructions, with respect to dates, documents, claims or privileges, etc.

If AT&T feels that any request is ambiguous, please notify Verizon MA so that the request may be clarified prior to the preparation of a written response.

DEFINITION AND INSTRUCTIONS

1. With respect to each question, please state: (1) the name(s) and title(s) of the person or persons responsible for preparing the response; (2) the name(s) and title(s) of the person or persons who would be competent to testify concerning the response, whether or not that person will be called as part of the party's direct case in this proceeding.

2. In these Information Requests, "AT&T" means AT&T Communications of New England, Inc., HAI Consulting, Inc. ("HAI"), BroadView Telecommunications, LLC ("BVT"), Telecom Visions, Inc. ("TVI") and their respective parents, subsidiaries, affiliates, agents, servants, attorneys, investigators, employees, ex-employees, consultants, representatives and others who are in possession of, or who may have obtained information for or on behalf of any of the above mentioned persons or entities.

3. "Verizon" means Verizon New England, Inc. d/b/a Verizon Massachusetts.

4. "HAI 5.2a" means the HAI Model, Release 5.2a-MA filed by AT&T in this proceeding.

5. "Inputs Portfolio" means the HAI Model, Release 5.2a-MA Inputs Portfolio filed by AT&T in this proceeding.

6. "Model Description" means the HAI Model, Release 5.2a-MA Model Description filed by AT&T in this proceeding.

7. "Document" and "documentation" are used in the broadest sense to mean all writings and records of every type, including without limitation, written, printed, typed or visually reproduced material of any kind, the original and all copies of any and all letters, reports, memoranda, files, communications, correspondence, agreements, bills, receipts, studies, analyses, telegrams, telexes, minutes, bulletins, instructions, literature, memoranda of conversations, notes, notebooks, diaries, data sheets, financial statements, work sheets, recordings, tapes, drawings, graphs, indexes, charts, telephone records, photographs, photographic records, computer files, whether or not such files are presently in a hard copy form, other data compilation, or any other written recorded, transcribed, punched, taped, filed or other graphic matter including any draft of the foregoing items and any copy or reproduction of any of the foregoing items upon which any notation, work figure, or form is recorded or has been made which does not appear on the original or as to whose existence, either past or present, the responding party has any knowledge of information. "Document" and "documentation" shall also mean copies of documents, notwithstanding that the originals thereof are not in your possession, custody or control, and all attachments to any document.

8. If AT&T cannot answer a request in full, answer to the extent possible and state why AT&T cannot answer the request in full.

9. If AT&T refuses to respond to any request by reason of a claim of privilege, state the privilege claimed and the facts relied upon to support the claim of privilege.

10. Please serve a copy of the responses to these requests on Verizon MA's attorney, Bruce P. Beausejour, 185 Franklin Street, Room 1403, Boston, Massachusetts 02110-1585. Please make every effort to expedite delivery of responses to these requests, including email, shipping by Express Mail, UPS, Federal Express, Purolator Courier, or means of equal or greater speed.

INFORMATION REQUESTS

1. Identify where in HAI 5.2a the Rastorization algorithms can be found, as described at page 34, footnote 36 of the Model Description.

2. The Model Description, Sections 5.3.6 and 5.3.7, describes HAI 5.2a's utilization of geocoding to assign customers to actual, physical locations. Appendix C, page 5, of the Model Description depicts the Geocode and Gross-up Process, which includes a count of unlocated customer locations in each census block. Provide the following information with respect to the above mentioned sections:

a. In Massachusetts, for density zones 1-9, identify the quantity of "unlocated" Verizon residential customer locations in each density zone and identify the percentage they represent of all Verizon residential locations in each density zone.

b. In Massachusetts, for density zones 1-9, identify the quantity of "unlocated" Verizon business customer locations in each density zone and identify the percentage they represent of all Verizon business locations in each density zone.

3. Provide the percentage of all customer and business addresses that were successfully geocoded (i.e., assigned a longitude and latitude) in the State of Massachusetts.

4. Provide, in electronic format, a count of the number and percentage of business locations that were successfully geocoded to the point level for each Census Block Group ("CBG") in the State of Massachusetts.

5. Provide, in electronic format, a count of the number and percentage of residential locations that were successfully geocoded to the point level for each CBG in the State of Massachusetts.

6. State how the aspect ratio for a cluster reflect the geocoded "actual" locations of clusters (i.e., do the geocoded locations in HAI 5.2a resemble the clustered areas in HAI 5.2a).

7. Describe in detail how HAI 5.2a accounts for households that have a United States Postal System match and a street network match, but do not have a six digit latitude and longitude match.

8. Identify, by category, the number and percentage of how many residential, business, pay-phone and special access phone locations are actually geocoded in HAI 5.2a for the State of Massachusetts.

9. Provide the latitude and longitude, in electronic format, of each geocoded customer location and each customer located by the "surrogate" method for the State of Massachusetts.

10. Provide the geocode success rates for residence locations for each density zone in each Verizon wire center.

11. Provide the geocode success rates for business locations for each density zone in each Verizon wire center.

12. Identify the price that AT&T paid the owner of the raw geocode data for the use of that data for the State of Massachusetts.

13. In addition to the fee paid to the owner of the raw geocode data, did AT&T have to pay any other fees to create the input files?

14. If the answer to data request no. 13 is yes, identify to whom and by whom the fee payments were made, and the amount of the fee payments.

15. State whether AT&T has provided any data to HAI, BVT or TVI for use in HAI 5.2a.

16. If the answer to data request no. 15 is yes, provide the data and describe in detail how it was created and the manner in which it is used in HAI 5.2a.

17. State whether Verizon could use an alternative geocode data set to run HAI 5.2a. Also, identify any and all costs, fees, or expenses that would be associated with Verizon running alternative geocode data in HAI 5.2a.

18. Describe in detail how the normalized customer location counts are used by HAI 5.2a, as referenced on page 25 of the Model Description.

19. Describe in detail how the process employed to normalize business line counts differs from the process employed to normalize residence line counts, as referenced on page 27 of the Model Description.

20. State exactly what portions of HAI 5.2a's customer location database have been pre-processed and what portions are developed through running the model itself.

21. For the State of Massachusetts provide:

a. the number of addresses obtained through the Metromail, Inc. National Consumer Database;

b. the percentage of addresses to total households obtained through the Metromail, Inc., National Consumer Database; and,

c. the percentage of addresses that are P.O. Boxes and Rural Route Boxes.

22. If HAI 5.2a assumes there will be distribution plant supported on poles in the two highest density zones, identify where the costs associated with such poles are accounted for in the model.

23. Provide, in electronic format, the geocoded data set for the State of Massachusetts used to produce the clusters in HAI 5.2a.

24. Describe in detail and provide all documents concerning, referring or relating to the exact procedure used by HAI 5.2a to normalize line counts by census block to sum the Study Area wide data on total residential line counts as described at pages 25-26 of the Model Description. This description should state the basis for additions or reductions to specific census blocks that are made in order to perform the normalization of total line counts for the study area to the targets.

25. Provide all documents concerning, referring or relating to the estimated total business count of 12 million that is used as the basis for the business adjustment referenced at page 27 of the Model Description.

26. Provide all software and inputs that constitute the PNR Associates, Inc. ("PNR") clustering algorithm.

27. Provide an electronic copy of the Dun & Bradstreet National Database along with all documentation concerning, referring or relating thereto. Describe in detail the method by which AT&T verified the accuracy of this database.

28. Provide an electronic copy of the Metromail, Inc. National Database along with all documentation concerning, referring or relating thereto. Describe in detail the method by which AT&T verified the accuracy of this database.

29. Provide an electronic copy of the CENTRUS Geocoding Software along with all documentation concerning, referring or relating thereto. Describe in detail the method by which AT&T verified the accuracy of this software.

30. Provide an electronic copy of the Point-Coding reference data for CENTRUS point coding software along with all documentation concerning, referring or relating thereto. Describe in detail the method by which AT&T verified the accuracy of this software.

31. Provide an electronic copy of the "Wire Center Mapinfo Mapping Boundaries" data along with all documentation concerning, referring or relating thereto. Describe in detail the method by which AT&T verified the accuracy of this data.

32. Provide an electronic copy of the National Access Line Model along with all inputs and documentation concerning, referring or relating thereto. Describe in detail the method by which AT&T verified the accuracy of this Model.

33. Provide an electronic copy of all documents concerning, referring or relating to any and all external validation tests or studies that have been performed on HAI 5.2a.

34. With respect to the "changes in the default values" referenced at page 7 of the Model Description, provide a listing of the old and new values and a detailed explanation of the basis for each change. Identify all changes in the default input values from HAI Model, Release 5.0a to HAI 5.2a.

35. Provide any and all contracts, memoranda, or any other documents exchanged between PNR and AT&T concerning the development of HAI 5.2a's (or any predecessor release) geocoding process or clustering algorithm.

36. The Distribution Module of HAI 5.2a references "Riser," "Intrabuilding," "Block," and "Building" cable.

a. Define each of these cable types;

b. identify each situation in which each cable type is used within the Distribution Module of HAI 5.2a;

c. provide the cable and structure cost for each cable type; and,

d. specify where each of the costs for each cable type can be found in HAI 5.2a. Include references to the particular location of the data (i.e., line number, row number, field, cell, etc.).

37. The Copper Feeder Manhole Spacing table in Section 3.1.2 of the Inputs Portfolio identifies distances between manholes as 400 feet, 600 feet or 800 feet for various density zones.

a. Identify the default distance between manholes for each density zone;

b. provide all documents or workpapers concerning, referring or relating to the development of the default distance between manholes; and,

c. to the extent no documents or workpapers were used in the development of the default distance between manholes, provide the rationale for selecting the default distance between manholes for each density zone.

38. Provide the most current AT&T engineering guidelines (electronic and hard copy) and any other documents used by AT&T personnel to engineer AT&T's local loop and/or outside plant network.

39. Provide the most current AT&T engineering guidelines (electronic and hard copy) and any other documents used by AT&T personnel to engineer AT&T's long distance network.

40. Produce all engineering guidelines (e.g., local loop design, local switch, and tandem switch guidelines) concerning, supporting, or relating to HAI 5.2a's engineering assumptions.

41. Describe in detail how Rights of Way ("ROW") costs, including capitalized site acquisition costs (i.e., payments for easement, lease, purchase) and engineering costs, are accounted for by HAI 5.2a.

42. Provide all documents concerning, referring or relating to the ROW costs calculated by HAI 5.2a for the State of Massachusetts.

43. Identify the specific ROW costs (in dollars) assumed for large Digital Loop Carriers ("DLCs") and identify where in HAI 5.2a (i.e., specific fields or cells) these costs can be found.

44. Identify the specific ROW costs (in dollars) assumed for small DLCs and identify where in HAI 5.2a (i.e., specific fields or cells) these costs can be found.

45. Describe and provide all documents concerning, referring or relating to how the costs associated with records mechanization are accounted for in HAI 5.2a.

46. Provide a copy of all local loop transmission and design practices followed in HAI 5.2a.

47. Provide a separate itemized listing of the material and installation costs for each item that is included in HAI 5.2a, input item B66 found on page 38 of Appendix B to the Model Description.

48. Provide all documents and workpapers concerning, referring, or relating to any efforts by AT&T to compare the Operator Wages calculated by HAI 5.2a with actual wages paid by:

a. an incumbent local exchange carrier ("ILEC");

b. an interexchange carrier;

c. a competitive local exchange carrier ("CLEC"); and

d. a CLEC's operators.

49. Section 7 of the Inputs Portfolio lists the source of the "Regional Labor Adjustment Factor" table on page 158 as "Martin D. Kiley and Marques Allyn, eds., *1997 National Construction Estimator 45th Edition*, pp. 12-15. [Normalized for New York State as 1.00]." Provide the following information:

a. all documents and assumptions (electronic and hard copy) concerning, referring or relating to the logic and/or methodology used to convert the city-specific labor rates contained in the *National Construction Estimator* to the State estimates contained in the "Regional Labor Adjustment Factor" table (See Section 7, page 158 of the Inputs Portfolio);

b. all calculations that are required to map the referenced *National Construction Estimator* values to the values noted in the "Regional Labor Adjustment Factor" table referenced in subsection a above;

c. describe in detail how the HAI 5.2a uses the Area Modification Factors on pages 12-15 of the *1997 National Construction Estimator 45th Edition*; and

d. provide any and all calculations, comparisons, and derivations that utilize the data in the *1997 National Construction Estimator 45th Edition.*

50. State whether the labor rates used in HAI 5.2a reflect Beginning Year, Mid Year, or Year End data.

51. Identify each and every default input value in HAI 5.2a that was modified as a result of additional surveys of contractors and suppliers to ILECs.

52. Provide all documents concerning, referring, or relating to any analysis(es) conducted by AT&T of Verizon's existing network in the State of Massachusetts.

53. Provide all documents that were reviewed, prepared, or relied upon by AT&T to establish an opinion, contention, or criticism of the network technology currently deployed by Verizon in the State of Massachusetts.

54. Identify by year and customer class (residence or business) the number of customers in Verizon's Massachusetts service area that AT&T has provided with basic exchange service for each year since 1996.

55. Provide all documents concerning, referring or relating to any analysis performed by AT&T since 1996 to determine whether it should enter Verizon's Massachusetts service area for the purpose of providing basic exchange service.

56. Provide the rationale for using an Annual to Daily Usage reduction factor of 270 days referenced on page 91, Section 4.3.13 of the Inputs Portfolio rather than the factor of 264 days that appears in the AT&T Capacity Cost Study.

57. Identify who owns HAI 5.2a and describe in detail the scope and extent of each owner's rights to the model.

58. Is AT&T free to release or sell HAI 5.2a to other companies for use outside of this or any other regulatory proceeding?

59. If the answer to data request no. 58 is yes, identify the terms under which HAI 5.2a may be released.

60. To the extent that the release of HAI 5.2a is restricted, state the basis for the restriction. Also, produce any and all documents concerning, referring or relating to any restrictions on the release of HAI 5.2a.

61. Identify the company that arranged to have PNR provide the customer location data and develop the customer location input files for HAI 5.2a.

62. Explain, in detail, how HAI 5.2a assigns customer locations to a particular wire center.

63. Provide all documents including, but not limited to, electronic files, databases and workpapers, exchanged between AT&T, HAI, TVI or BVT and PNR concerning, referring or relating to the PNR customer location data used or considered for use in HAI 5.2a.

64. Provide any and all documents including, but not limited to, electronic files, databases and workpapers, exchanged between HAI, TVI or BVT and AT&T concerning, referring or relating to the PNR customer location data used or considered for use in HAI 5.2a.

65. Identify in detail how the HAI 5.2a differs from the HAI Model Release 5.2 that was filed by AT&T with the New York State Public Utility Commission. The response should identify, but not necessarily be limited to, all:

a. differences in modeling assumptions;

b. differences in input assumptions;

c. differences in default input assumptions;

d. differences in technology assumptions; and,

e. differences in platform algorithms.

Also, for each difference identified above, explain the basis for the difference.

66. Does the HAI 5.2a differ from the HAI Model Release 5.2a that was filed by AT&T with the New Jersey Board of Public Utilities? If so, please identify any and all differences. The response should identify, but not necessarily be limited to, all:

a. differences in modeling assumptions;

b. differences in input assumptions;

c. differences and supporting justification for changes in default input assumptions;

d. differences in technology assumptions; and,

e. differences in platform algorithms.

67. On page 8, lines 5-6, of his Direct testimony, Dr. Mercer states that HAI 5.2 "neither is nor should it be a tool for designing a physical telecommunications network." Is it Dr. Mercer's position that TELRIC costs should not be based on the design of an actual physical telecommunications network? Please explain in detail.

68. Identify any and all of the default values in the HAI 5.2a that have been changed from the Hatfield Model, Release 2.2.2 previously submitted by AT&T in Massachusetts. For each default value:

a. specifically explain the nature of each change;

b. set forth in detail the reasons for each change;

c. identify the person or persons responsible for determining each change;

d. provide copies of all documents that were considered in connection with each change or in any way discusses each change; and

e. provide a summary of communications regarding the decision to make each change.

69. Describe in detail any and all sampling or analysis that was undertaken to verify that the Business and Residence location and line count data as modeled in HAI 5.2a is consistent with actual Massachusetts demographics.

70. Provide all documents concerning, referring or relating to the engineering, furnishing, and installation of AT&T's most recent digital switch.

71. Identify any and all expenses concerning, referring or relating to the installation of AT&T's most recent digital switch, including riggers, transportation, and heavy equipment as well as all installation labor costs. Provide the total cost information and the number of lines and the number of trunks the switch was initially equipped for and identify how many of those lines and how many of those trunks were actually placed in service at the time the switch was initially placed in service.

72. Provide all documents concerning, referring or relating to the engineering, furnishing, and installation of AT&T's most recent digital tandem switch.

73. Identify any and all expenses concerning, referring or relating to the installation of AT&T's most recent tandem switch, including riggers, transportation, and heavy equipment as well as all installation labor costs. Provide the total cost information on and

the number of lines and the number of trunks the switch was initially equipped for and identify how many of those lines and how many of those trunks were actually placed in service at the time the switch was initially placed in service.

74. Provide all documents concerning, referring or relating to the engineering, furnishing, and installation of AT&T's most recent Signal Transfer Point ("STP").

75. Identify any and all expenses concerning, referring or relating to the installation of AT&T's most recent STP, including riggers, transportation, and heavy equipment as well as all installation labor costs.

76. Provide all documents concerning, referring or relating to the engineering, furnishing, and installation of AT&T's most recent Signal Control Point ("SCP").

77. Identify any and all expenses concerning, referring or relating to the installation of AT&T's most recent SCP, including riggers, transportation, and heavy equipment as well as all installation labor costs.

78. Provide any and all documents concerning, referring or relating to the engineering, furnishing, and installation of AT&T's most recently constructed power plant including the addition of rectifiers, batteries, fuse distribution bays, automatic breakers, microprocessor, and the standby emergency generator.

79. Identify any and all expenses concerning, referring or relating to the installation of AT&T's most recently constructed power plants, including riggers, transportation, and heavy equipment as well as all installation labor costs.

80. Provide copies of any and all documents concerning, supporting, referring or relating to the development of the default input values used in the HAI 5.2a, including but not limited to all documents previously produced by AT&T in regulatory proceedings in the States of New York, New Jersey, Pennsylvania, California and Vermont.

81. Explain in detail how HAI 5.2a performs a dynamic life cycle cost comparison to determine what type of feeder technology should be employed.

82. Explain in detail how HAI 5.2 "locates" customers who are not identified through the geocoding process. Provide any and all documents concerning, referring or relating to the process of locating such customers.

83. Provide the "clustering algorithm" that is used to determine groupings of customers and explain how this algorithm is utilized in HAI 5.2a and all previous versions of the Hatfield Model Release. Provide all documents concerning, supporting, referring or relating to this algorithm.

84. Describe in detail the calculation of the "life-cycle maintenance and capital carrying costs of the different structure types" that is performed by HAI 5.2a in analyzing

placement costs of buried and aerial structure. Provide all documents concerning, referring or relating to this calculation.

85. Describe in detail the calculations performed by HAI 5.2a to define the set of interoffice SONET rings that connect host, stand-alone and tandem switches to each other. Provide any and all documents concerning, referring or relating to these calculations.

86. Explain how HAI 5.2a calculates the investment required for the redundant paths and associated transmission terminal equipment for the point-to-point rings that connect small offices to the tandem switches. Provide any and all documents concerning, referring or relating to that calculation.

87. Explain in detail the basis for the default input for low-density DLC site and power used in the HAI 5.2a and the reasons it differs from earlier versions of the Hatfield Model. Provide all documents concerning, referring or relating to this input.

88. Explain the basis for the default inputs for SAI Indoor Investment in HAI 5.2a and the reasons it differs from earlier versions of the Hatfield Model. Provide all documents concerning, referring or relating to this input.

89. Explain the basis for the default input for Integrated COT, installed in HAI 5.2a and the reasons it differs from earlier versions of the Hatfield Model. Provide all documents concerning, referring or relating to this input.

90. Explain the basis for the default inputs for low-density DLC basic common equipment investment for initial lines and for additional lines in HAI 5.2a and the reasons it differs from earlier versions of the Hatfield Model. Provide all documents concerning, referring or relating to this input.

91. Identify the members of the panel of "outside plant experts" used to determine the cost for buried drop placement in urban areas described on page 16 of the Inputs Portfolio. Provide all documents concerning, referring or relating to the appropriate aerial and buried drop placement rates used by this panel of experts. Provide all documents concerning, referring or relating to the various drop placement rates used in HAI 5.2a.

92. Provide all documents concerning, referring or relating to the current per foot costs of copper cable. Provide all documents concerning, supporting, referring or relating to the appropriate cable costs in Massachusetts.

93. Identify the basis for the assumption that material costs represent 40% of the total installed cost of distribution cable and that engineering represents an average 15% of the installed cost as stated on page 22 of the Inputs Portfolio. Identify the "outside plant engineers" who agreed on these estimates and provide a copy of all documents concerning, referring or relating to this determination.

94. Identify the members of the engineering team that was used to estimate the installed cost of copper cable for sizes of 400 pairs and larger, and identify the "installed cable costs around the country" that were reviewed by this team in arriving at its estimates. Provide all documents concerning, referring or relating to the appropriate installed cost of copper cable in Massachusetts.

95. Provide all documents concerning, referring or relating to the estimation of the material cost per foot of duct described on page 27 of the Inputs Portfolio.

96. Identify the allowance that is provided for stabilizing conduit placed in trenches and provide all documents concerning, referring or relating to the use of this allowance.

97. Describe in detail the manner in which the Hardrock Placement Multiplier was determined and identify the independent contractors who provided information used to develop this input. Provide copies of any and all documents concerning, supporting, referring or relating to the determination of the Hardrock Placement Multiplier. Identify any and all factors concerning or supporting this input. Provide a copy of any and all documents concerning, referring or relating to the appropriate input for Massachusetts.

98. Describe in detail the manner in which the Softrock Placement Multiplier was determined and identify the independent contractors who provided information used to develop this input. Provide all documents concerning, referring or relating to the determination of the Softrock Placement Multiplier. Identify any and all factors concerning or that support this input and the computations performed to generate this input. Provide all documents concerning, referring or relating to the appropriate input for Massachusetts.

99. Provide all documents and data concerning, referring and relating to the FCC examination of both indoor and outdoor SAIs that was used to determine the SAI Investment inputs used as default values in HAI 5.2a. Provide a copy of all analysis that was done to determine that these are the appropriate inputs for Massachusetts.

100. Provide all documents referred to or relied upon in determining the DLC channel unit investment inputs used in the HAI 5.2a, along with a statement of all factors that support these inputs and all computations performed to generate these inputs. Provide a copy of all documents generated in determining the appropriate input for Massachusetts.

101. Provide copies of all documents referred to or relied upon in determining the optical patch panel investment inputs used in the HAI 5.2a-MA, along with a statement of all factors that support these inputs and all computations performed to generate these inputs. Provide a copy of all documents generated in determining the appropriate input for Massachusetts.

102. Provide copies of all documents referred to or relied upon in determining the common equipment investment per additional line increment used in the HAI 5.2a-MA, along with a statement of all factors that support these inputs and all computations

performed to generate these inputs. Provide a copy of all documents generated in determining the appropriate input for Massachusetts.

103. Identify the AT&T and MCI subject matter experts who were consulted to determine the Business Penetration Ratio input used in the Inputs Portfolio. Identify the individual(s) from HAI Associates who discussed this input with the subject matter experts, and provide information provided by the subject matter experts. Produce copies of all workpapers and backups generated to determine this input.

104. Provide the Local Exchange Routing Guide data used to estimate the number of shared-use switches in determining the tandem/EO wire center common factor input.

105. Provide all "data submitted to the FCC" referred to in determining the transmission terminal investment inputs used in the HAI 5.2a-MA, along with a copy of all documents concerning, referring or relating to the determination that these are the appropriate inputs for Massachusetts.

106. Provide copies of all invoices, contracts, catalogs, published estimates or other documents referred to or relied upon in determining the channel bank investment, per 24 lines inputs used in the HAI 5.2a, along with a statement of all factors that support these inputs and all computations performed to generate these inputs. Provide a copy of all documents generated in determining the appropriate input for Massachusetts.

107. Provide copies of all invoices, contracts, catalogs, published estimates or other documents referred to or relied upon in determining the digital cross connect system, installed, per DS-3 inputs used in the HAI 5.2a, along with a statement of all factors that support these inputs and all computations performed to generate these inputs. Provide a copy of all documents generated in determining the appropriate input for Massachusetts.

108. Provide copies of all invoices, contracts, catalogs, published estimates or other documents referred to or relied upon in determining the investment per operator position used in the HAI 5.2a, along with a statement of all factors that support these inputs and all computations performed to generate these inputs. Provide a copy of all documents generated in determining the appropriate input for Massachusetts.

109. Provide copies of all invoices, contracts, catalogs, published estimates or other documents referred to or relied upon in determining the tandem common equipment investment used in the HAI 5.2a, along with a statement of all factors that support these inputs and all computations performed to generate these inputs. Provide a copy of all documents generated in determining the appropriate input for Massachusetts.

110. Provide copies of all invoices, contracts, catalogs, published estimates or other documents referred to or relied upon in determining the STP minimum common investment per pair used in the HAI 5.2a, along with a statement of all factors that support these inputs and all computations performed to generate these inputs. Provide a copy of all documents generated in determining the appropriate input for Massachusetts.

111. Provide copies of all invoices, contracts, catalogs, published estimates or other documents referred to or relied upon in determining the SCP investment per transaction per second used in the HAI 5.2a, along with a statement of all factors that support these inputs and all computations performed to generate these inputs. Provide a copy of all documents generated in determining the appropriate input for Massachusetts.

112. Provide all documents, including but not limited to workpapers, reports, memoranda and correspondence, which summarize, describe, initiate or otherwise relate to any attempts to verify the validity of HAI 5.2a or any prior version or release of the Hatfield Model or any variation thereof, or of the outputs it produces.

113. Provide intermediate and/or final results of any comparisons of the input or output values of any version of the HAI 5.2a-MA with (a) any existing local exchange network or any of its component parts, or (b) any other cost studies or models developed by AT&T, or any other entity.

114. Does AT&T utilize the same fill factors used as default values in HAI 5.2a in doing their own network planning? If not, why not? Identify the fill factors AT&T uses in their own network planning.

115. What are AT&T's investments for transmission equipment that terminates both ends of an SS7 link, as defined by the HAI 5.2a?

116. What are AT&T's service control points investments per transaction per second, as defined by the HAI 5.2a?

117. What are AT&T's investments per operator position, as defined by the HAI 5.2a?

118. What are AT&T's investments per public telephone station, as defined by the HAI 5.2a?

119. What are AT&T's investments per installed DS-1 channel bank?

120. What are AT&T's per pair STP investments as defined by the HAI 5.2a?

121. Identify how many STP pairs AT&T has in its U.S. domestic network and the average link termination fill percentage in those STP pairs.

122. For each of the past five years, identify the location(s) and price per square foot that AT&T has paid for land on which switching or indoor transmission facilities are located within the State of Massachusetts.

123. For each of the past five years, identify the location(s) and AT&T's cost per square foot of construction for buildings that house switching or transmission equipment in the State of Massachusetts.

124. Identify AT&T's average investment per installed OC-48 add drop multiplexer.

125. Identify AT&T's average investment per OC-48 optical regenerator.

126. Identify AT&T's average investment per optical distribution panel (the physical fiber patch panel used to connect interoffice fibers to transmission equipment).

127. Identify AT&T's investment per foot for placing fiber optic cable in trenches in the State of Massachusetts.

128. Identify AT&T's investment per foot in underground conduit for fiber optic cable in the State of Massachusetts.

129. With reference to page 27, lines 15-17 of Mr. Hirshleifer's direct testimony filed by AT&T in this proceeding, please explain in detail how Merrill Lynch arrived at its estimated 10.20 percent expected return on the market, and provide all workpapers, surveys, data, documentation, studies, and calculations relating to the estimate, including:

a. the companies in the Merrill Lynch sample group

b. the underlying data inputs

c. the time period from which supporting data are derived

d. the precise methodology or methodologies used by Merrill Lynch

Please provide the requested data in both electronic spreadsheet and hard copy.

130. Please provide the cost of money used by AT&T in its Total Incremental Cost Model (TICM) as well as the rationale and supporting documentation justifying that value. If this model is no longer used by AT&T, please provide the cost of money when the model was last used by AT&T. If the cost of money used in that model varies by state, provide the value and supporting documentation for Massachusetts and for every other state for which separate values were used.

131. On or about page 4 of Mr. Lee's direct testimony filed by AT&T in this proceeding, he makes the following statement: "In depreciation proceedings, such forward-looking economic plant lives are termed 'projection lives,' to differentiate them from 'remaining lives' and 'average service lives' which reflect past plant placements." Please provide by plant account, lives in accordance with Mr. Lee's definition and future net salvages that.

a) AT&T uses to depreciate its plant equipment.

b) AT&T uses to depreciate its fixed wireless equipment

c) AT&T or any affiliates use to depreciate cable television plant and equipment

d) AT&T affiliate, TCG (formerly Teleport), uses to depreciate its plant and equipment

132. AT&T has announced trials of "fixed wireless" service. Please describe AT&T's plans to provide service in Massachusetts using fixed wireless technology, including the date such service will be initiated.

134. Please describe and identify, by location, any and all switches and cable routes owned or operated by AT&T or any of its affiliates, such as TCG (formerly Teleport).

135. According to Mr. Lee as stated in his direct testimony on page 6, the depreciation reserve is an extremely important indicator of the depreciation process. Please provide AT&T's reserve percentages comparable to those used on the chart witness Lee exhibit 4, for the years 1990 through 2000.

Respectfully submitted,

Verizon Massachusetts

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Dated: May 17, 2001